ABSTRACT OF THE DISCLOSURE

A real time embedded video processing system includes a central processing unit (CPU); a real time operating system; and an input/output interface that receives user input via a user input device. The system runs a graphics application that generates computer graphics in response to user input. A device control application controls multiple different video input sources in response to user input. The system includes a video processing engine comprising a dedicated logic circuit, such as a field programmable gate array (FPGA). The circuit includes a pixel processing engine that receives input from at least one of the video input sources and receives computer graphics from the graphics application. The pixel processing engine alpha blends the computer graphics with the video input and then outputs the blended data in real time.